

CSE494/598 Mobile Health and Social Networking (Sp2009)

Homework 2

Due on Thursday, February 12, 2009

Submission procedure: email to cse494sp09@impact.asu.edu before Thursday's class

You are asked expand in writing the Thursday in-class discussion on your application topic.

Total 100 points.

- A. [60] In previous classes, we talked about the importance of adaptability in mobile pervasive applications, and how adaptability can be enabled by context-awareness and state-based approaches. Select an application that we described in class. In the application that you selected:
- Describe the application:
 - Describe the *usage scenarios* of the application (i.e. what the application is meant for and typical use cases/scenarios of how users use it)
 - Identify the common and underlying *assumptions* of this application (e.g. what hardware it is assumed to work with, what resources are available, any human behavior assumptions, and so on so forth).
 - Itemize and describe the *functionality* (i.e. how the application implements the usage scenarios based on the assumptions) and the *data* (i.e. information) that is being input, processed and presented by it.
 - Describe the application's context awareness and adaptability:
 - Itemize and describe the various *active contexts* that pertain to the application (e.g. what is the *user* context, what is the *location* context, *physical* context etc.).
 - Describe how the functionality or the data *is adapted* to the active context (e.g. describe proximate selections, automatic reconfigurations, contextual information, presentation etc).
 - Pick one context-based reconfiguration or data adaptation. An adaptive functionality like this can be implemented using a *state-based approach*, as we talked in class. In this direction, what are the *states* (modes) of the adaptive functionality? What are the *state transitions* and what *triggers* each transition? (you may want to draw a state transition diagram for this)
- B. [40] In previous classes, we talked about an ideal pervasive application requires *little attention* and *little input* from the user, with the general goal to free-up the user's time and attention.
1. Select a contextual functionality from your application in A and argue on how much user time it saves compared to a conventional non-contextual implementation. Before you attempt this question, you can read "*Towards Context Aware Computing: Experiences and Lessons*", by Smailagic, Siewiorek, Anhalt and Gemperle, available at <http://www.cs.cmu.edu/~asim/DistractionFreeComputing.pdf>.
 2. Some students expressed the concern that a pervasive application can be "*too pervasive*" (i.e. "too invisible" or "too autonomous"). Can you identify some (potential) functionality in your application above that could be characterized as too pervasive?